INDEX TO SPECIFICATIONS

Contents:

1. PROJECT DESCRIPTION

The Project involves construction work associated with:

Rosebud East Fishing Access Site (FAS) Accessible Fishing Platform Development Project, Fish, Wildlife & Parks (FWP) project # 7173723, Located near Forsyth, Rosebud County, MT

The project generally includes site grading involving excavation, embankment construction, construction of an accessible fishing platform and footings, sidewalk placement, bollards, construction of structures, erosion control devices, a floating turbidity curtain, and other incidentals as shown on the Plans.

2. PROJECT RELATED CONTACTS

Project contacts are designated as follows:

Owner:
Montana FWP
1420 E. Sixth Ave.
PO Box 200701
Helena, MT 59620-0701

FWP Project Representative: **Thomas M. Mannatt**
FWP Project Manager
1522 9th Avenue
Helena, MT 59620
406-841-4006 (wk.)
406-431-4031 (cell)
406-841-4004 (fax)

3. SITE INSPECTION

All Bidders should satisfy themselves as to the construction conditions by personal examination of the site described in this document. Bidders are encouraged to make any investigations necessary to assess the nature of the construction and the difficulties to be encountered, see General Conditions, Article 3.

4. SOILS INFORMATION

Geotechnical investigation work has been done for this Project. The conclusions and recommendations are available for review on the FWP website and included in a report entitled,

GEOTECHNICAL INVESTIGATION REPORT
EAST ROSEBUD FISHING PLATFORM EAST ROSEBUD FISHING ACCESS
FORSYTH, MONTANA

dated July 31, 2018. It is the responsibility of the Bidders to review this document and be familiar with the site conditions that may be encountered with this Project prior to bid preparation, see General Conditions, Article 3.

5. PROJECT REPRESENTATIVE, INSPECTIONS, AND TESTING

The Contractor's work will be periodically tested and observed to insure compliance with the Contract Documents. Complete payment will not be made until the Contractor has demonstrated that the work is complete and has been performed as required. If the Project Representative detects a discrepancy between the work and the requirements of the Contract Documents at any time, up to and including final inspection, such work will not be completely paid for until the Contractor has corrected the deficiency

see General Conditions, Article 9.The Project Representative will periodically monitor the construction of work to determine if the work is being performed in accordance with the contract requirements. The Project Representative does not have the authority or means to control the Contractor's methods of construction. It is, therefore, the Contractor's responsibility to utilize all methods, equipment, personnel, and other means necessary to assure that the work is installed in compliance with the Drawings and Specifications, and laws and regulations applicable to the work. Any discrepancies noted shall be brought to the Contractor's attention, who shall immediately correct the discrepancy. Failure of the Project Representative to detect a discrepancy will not relieve the Contractor of his ultimate responsibility to perform the work as required, see General Conditions, Article 3.

The Contractor shall inspect the work as it is being performed. Any deviation from the Contract requirements shall be immediately corrected. Prior to any scheduled observation by the Project Representative, the Contractor shall again inspect the work and certify to the Project Representative that he has inspected the work and it meets the requirements of the Contract Documents. The Project Representative may require uncovering of work to verify the work was installed according to the contract documents see General Conditions, Article 12.

The work will be subject to review by the Project Representative. The results of all such observations, and all contract administration, shall be directed to the Contractor only through the Project Representative.

5.1 Services Required by the Contractor. The Contractor shall provide the following services:

a. Any field surveys to establish locations, elevations, and alignments as stipulated on the Contract Documents. FWP reserves the right to set preliminary construction staking for the project. The Contractor is responsible to notify FWP for any construction staking discrepancies.

b. Preparation and certification of all required shop drawings and submittals as described in the General Conditions, Article 3.

c. All testing requiring the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the Project Representative. The laboratory shall be staffed with experienced technicians properly equipped, and fully qualified to perform the tests in accordance with the specified standards.

d. Preparation and submittal of a construction schedule, including submittals, see General Conditions, Article 3. The schedule shall be updated as required, as defined in the Contract Documents.

e. All Quality Control testing as required by the Contractor’s internal policies.

f. All Quality Assurance testing and/or re-testing as stated in the Contract Documents, see General Conditions, Article 13.

5.2 Services Provided by the Owner. The Owner shall provide the following services at no cost to the Contractor except as required for retests as defined in the Contract Documents.

a. The Project Representative may check compaction of backfill and surfacing courses using laboratory testing submittal information supplied by the Contractor. These tests are to determine if compaction requirements are being fulfilled in accordance with the Contract Documents. It is ultimately the responsibility of the Contractor to ensure that this level of compaction is constant and met in all locations.

b. Any additional Quality Assurance testing deemed appropriate by the Owner, at the Owner’s expense.

6. ENGINEERING INTERPRETATIONS

Timely Engineering decisions on construction activities or results have an important bearing on the Contractor's schedule. When engineering interpretation affects a plan design or specifications change, it should be realized that more than 24 hours may be required to gain the necessary Owner participation in the decision process including time for formal work directive or change order preparation as required.

7. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to the expiration of the warranty period, shall be removed and replaced with work or materials conforming to the provisions of the Contract Documents, see General Conditions, Article 12. Failure on the part of the Project Representative to condemn or reject bad or inferior work, or to note nonconforming materials or equipment on the Contractors submittals, shall not be construed to imply acceptance of such work. The Owner shall reserve and retain all its rights and remedies at law against the Contractor and its Surety for correction of any and all latent defects discovered after the guarantee period (MCA 27-2-208).
Only the Project Representative will have the authority to reject work which does not conform to the Contract Documents.

8. UTILITIES

The exact locations of existing utilities that may conflict with the work are not precisely known. It shall be the Contractor's responsibility to contact the owners of the respective utilities and arrange for field location services. One Call Locators, 1-800-424-5555
The Contract Documents may show utility locations based on limited field observation and information provided to the Project Representative by others. **The Project Representative cannot guarantee their accuracy.** The Contractor shall immediately notify the Project Representative of any discrepancies with utility locations as shown on the Contract Drawings and/or their bury depths that may in any way affect the intent of construction as scoped in these specifications.

There will be no separate payment for exploratory excavation required to locate underground utilities.

8.1 Notification. The Contractor shall contact, in writing, all public and private utility companies that may have utilities encountered during excavation. The notification includes the following information:

a. The nature of the work that the Contractor will be performing.
b. The time, date and location that the Contractor will be performing work that may conflict with the utility.
c. The nature of work that the utility will be required to perform such as moving a power pole, supporting a pole or underground cable, etc.

d. Requests for field location and identification of utilities.

A copy of the letter of notification shall be provided to the Project Representative. During the course of construction, the Contractor shall keep the utility companies notified of any change in schedule, or nature of work that differs from the original notification.

8.2 Identification. All utilities that may conflict with the work shall be the Contractor's responsibility to locate before any excavation is performed. Field markings provided by the utility companies shall be preserved by the Contractor until actual excavation commences. All utility locations on the Drawings should be considered approximate and should be verified in the field by the Contractor. The Contractor shall also be responsible for locating all utilities that are not located on the Drawings.

Utilities are depicted on the Contract Documents in accordance with their achieved “Quality Levels,” as defined in the American Society of Civil Engineer’s Document, ASCE 38, “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.” Reliance upon these data for risk management purposes during bidding does not relieve the Contractor, or Utility Owner from following all applicable utility damage prevention statutes, policies, and/or procedures during construction. It is important that the Contractor investigates and understands the scope of work between the project Owner and Engineer regarding scope of limits of the utility investigations leading to these utility depictions. Definitions of Quality Levels are described as follows:

a. "QUALITY LEVEL A" – (QLA): LOCATING THROUGH EXCAVATION. QLA data are highly accurate and are obtained by surveying an exposed utility. As such, both horizontal and vertical data are recorded. Survey accuracies are typically set at 15mm (1/2-inch) vertically, and to project survey standards horizontally (typically the same as for topography features), although these survey accuracies and precisions are generally left to the owner to specify in a scope of work. In addition to the applicable standard of care and any other additional standards imposed by commercial indemnity clauses, the accuracy of these location data is also typically guaranteed. Other data typically characterized include material type, surface elevation, utility size/capacity, outside dimensions, and configurations, soil type, and utility condition.

b. "QUALITY LEVEL B" – (QLB): DESIGNATING. QLB information is obtained through the application of appropriate surface geophysical methods to identify the existence and approximate horizontal location of utilities (a utility’s “designation”) within the project limits, followed by survey, mapping, and professional review of that designation. Underground utilities are identified by interpretation of received signals generated either actively or passively, and through correlating these received signals with visible objects (QLC) and record data (QLD) to determine function. Designated utilities that can’t be identified are labeled as “unknowns.” Although approximate has no accuracy associated with it, generally the locations are within inches rather than feet. The more utility congested the area or the deeper the utilities, the less likely it is that the designations will achieve that accuracy. These designations are then surveyed to project accuracies and precisions, typically third-order accuracy similar to other topography features. Note that surveying existing one-call marks does not lead to QLB data, since the genesis of the marks was not under the direct responsible charge of the professional certifying the QLB depictions, and one-call generally does not address unknown utilities, privately owned utilities, utilities without records, abandoned utilities, and so on. Nor does the professional have knowledge of the field technician’s qualifications, training, and level of effort.

c. "QUALITY LEVEL C" – (QLC): SURFACE VISIBLE FEATURE SURVEY. QLC builds upon the QLD information by adding an independent detailed topography site survey for

valves, risers, and manholes. Professional judgment is used to correlate the QLD data to the surveyed features, thus increasing the reliability of both utility location and existence. It is a function of the professional to determine when records and features do not agree and resolve discrepancies. This may be accomplished by depiction of a utility line at quality level D, effectively bypassing or disregarding (but still depicting) a surveyed structure of unknown origin. Additional resolution may result from consultation with utility owners.

d. "QUALITY LEVEL D" – (QLD): EXISTING RECORDS RESEARCH. QLD is the most basic level of information. Information is obtained from the review and documentation of existing utility records, verbal accounts, and/or one-call markings (to determine the existence of major active utilities and their approximate locations).

8.3 Removal or Relocation of Utilities. All electric power, street lighting, gas, telephone, and television utilities that require relocation will be the responsibility of the utility owner. A request for extending the specified contract time will be considered if utility owners cause delays.

8.4 Public Utilities. Water, sewer, storm drainage, and other utilities owned and operated by the public entities shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All such work shall be in accordance with these Contract Documents, or the Owner's Standard Specifications or written instructions when the work involved is not covered by these Specifications.

8.5 Other Utilities. Utilities owned and operated by private individuals, railroads, school districts, associations, or other entities not covered in these Special Provisions shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All work shall be in accordance with the utility owner's directions, or by methods recognized as being the standard of the industry when directions are not given by the owner of the utility.

8.6 Damage to Utilities and Private Property. The Contractor shall protect all utilities and private property and shall be solely responsible for any damage resulting from his construction activities. The Contractor shall hold the Owner and Project Representative harmless from all actions resulting from his failure to properly protect utilities and private property. All damage to utilities shall be repaired at the Contractor's expense to the full satisfaction of the owner of the damaged utility or property. The Contractor shall provide the Owner with a letter from the owner of the damaged utility or property stating that it has been repaired to the utility owner's full satisfaction.

8.7 Structures. The Contractor shall exercise every precaution to prevent damage to existing buildings or structures in the vicinity of his work. In the event of such damages, he shall repair them to the satisfaction of the owner of the damaged structure at no cost to the Owner.

8.8 Overhead Utilities. The Contractor shall use extreme caution to avoid a conflict, contact, or damage to overhead utilities, such as power lines, streetlights, telephone lines, television lines, poles, or other appurtenances during the course of construction of this project.

8.9 Buried Gas Lines. The Contractor shall provide some means of overhead support for buried gas lines exposed during trenching to prevent rupture in case of trench caving.

8.10 Pavement Removal. Where trench excavation or structure excavation requires the removal of curb and gutter, concrete sidewalks, or asphalt or concrete pavement, the pavement or

concrete shall be cut in a straight line parallel to the edge of the excavation by use of a spade-bitted air hammer, concrete saw, colter wheel, or similar approved equipment to obtain a straight, square clean break. Pavement cuts shall be 2 feet wider than the actual trench opening.

8.11 Survey Markers and Monuments. The Contractor shall use every care and precaution to protect and not disturb any survey marker or monuments, such as those that might be located at lot or block corners, property pins, intersection of street monuments or addition line demarcation. Such protection includes markings with flagged high lath and close supervision. No monuments shall be disturbed without prior approval of the Project Representative. Any survey marker or monument disturbed by the Contractor during the construction of the project shall be replaced at no cost to the Owner by a licensed land surveyor.

8.12 Temporary Utilities. The Contractor shall provide all temporary electrical, lighting, telephone, heating, cooling, ventilating, water, sanitary, fire protection, and other utilities and services necessary for the performance of the work. All fees, charges, and other costs associated therewith shall be paid for by the Contractor.

9. CONSTRUCTION SAFETY

The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees and subcontractors) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve them from compliance with the obligations and penalties set forth therein, see General Conditions, Article 10.

10. CONSTRUCTION LIMITS AND AREAS OF DISTURBANCE

10.1 Construction Limits. Where construction easements or property lines, are not specifically called out on the Contract Documents, limit the construction disturbance to ten (10) feet, when measured from the edge of the slope stake grading, or to the adjacent property line, whichever is less. Disturbance and equipment access beyond this limit is not allowed without the written approval of both the Project Representative and the Owner of the affected property. If so approved, disturbance beyond construction limits shall meet all requirements imposed by the landowner; this includes existing roads used and/or improved as well as the construction of new access roads. Special construction, reclamation, or post-construction reclamation or other closure provisions required by the landowner on access roads beyond the construction limits shall be performed by the Contractor at no additional cost to the Owner.

10.2 Areas of Disturbances. Approved areas of disturbance are those areas disturbed by construction activities within the construction limits and along designated or approved access routes. Such areas may require reclamation and revegetation operations, including grading to the original contours, top soiling with salvaged or imported topsoil, seeding, fertilizing, and mulching as specified herein. Other areas that are disturbed by the Contractor's activities outside of the limits noted above will be considered as site damage or unapproved areas of disturbance, see General Conditions, Articles 3 and 10. This includes areas selected by the Contractor outside the defined construction limits for mobilization, offices, equipment, or material storage.

Power wash all construction equipment entering the project site to prevent the spread of noxious weeds and aquatic invasive species. This applies to all FWP projects, whether or not individual construction permits specifically address cleaning of equipment.

12. TREE PROTECTION AND PRESERVATION

The Contractor and the Owner shall individually inspect all trees within the project construction limits prior to construction. The Owner shall determine which trees are to be removed and which trees are to be preserved. Construction of the grading, utilities and various roadway facilities must not significantly damage the trees root system or hinder its chances for survival. Reasonable variations from the Contract Documents, as directed by the Project Representative, may be employed to ensure the survival of trees.

13. CONSTRUCTION SURVEYS

The Contractor will be responsible for all layout and construction staking utilizing the Project Representative's existing control and coordinate data for the project. Dimensions and elevations indicated in layout of work shall be verified by the Contractor. Discrepancies between Drawings, Specifications, and existing conditions shall be referred to the Project Representative for adjustment before work is performed. The Project Representative may set location and grade stakes prior to construction; however, it is ultimately the responsibility of the Contractor to check and verify all construction staking for the project.

Existing survey control (horizontal and vertical) has been set for use in the design and ultimately the construction of these improvements. A listing of the coordinates and vertical elevation for each of these control points may be included in the project drawings.

The Contractor will be responsible for preserving and protecting the survey control until proper referencing by the Contractor has been completed. Any survey control obliterated, removed, or otherwise lost during construction will be replaced at the Contractor's expense.

Contractor shall be aware of property pins and survey monuments. Damage to these pins will require replacement of such by a registered land surveyor at no cost to the owner.

The Contractor shall provide construction staking from the Contractor's layouts and the control points. Contractor's construction staking includes at a minimum:

1. Slope stakes located at critical points as determined by the Project Representative.
2. Blue tops every longitudinally and transversely for subgrade and crushed base to verify finish grading of course.
3. Location and grade stakes for drainage features and retaining walls.
4. Location stakes for roadside safety items, permanent and temporary traffic control, and misc. items as determined by the Project Representative.

Original field notes, computations and other records take by the Contractor for the purpose of quantity and progress surveys shall be furnished promptly to the Project Representative and shall be used to the extent necessary in determining the proper amount of payment due to the Contractor.

14. MATERIAL SOURCES AND CONSTRUCTION WATER

The Contractor shall be responsible for locating all necessary material sources, including aggregates,

earthen borrow and water necessary to complete the work. The Contractor shall be responsible for meeting all transportation and environmental regulations as well as paying any royalties. The Contractor shall provide the Project Representative with written approvals of landowners from whom materials are to be obtained, prior to approval.

The Contractor may use materials from any source, providing the materials have been tested through representative samples and will meet the Specifications.

Water for compaction efforts shall be supplied by the Contractor.

15. MATERIALS SALVAGE AND DISPOSAL

Notify the Owner for any material salvaged from the project site not identified in the Contract Documents. The Owner reserves the right to maintain salvaged material at the project site, compensate the Contractor for relocation of salvaged material, or agreed compensation to Owner for material salvaged by the Contractor.

Haul and waste all waste material to a legal site and obey all state, county, and local disposal restrictions and regulations.

16. STORED MATERIALS

Contractor shall use an approved storage area for materials. Materials and/or equipment purchased by the Contractor may be compensated on a monthly basis. For compensation, provide the Project Representative invoices for said materials, shop drawings and/or submittals for approval, and applicable insurance coverage, see General Conditions, Article 9.

17. STAGING AND STOCKPILING AREA

Contractor shall coordinate staging with the local FWP Fisheries Access Manager, Jamison Hould. Use staging and stockpiling sites to facilitate the project as approved by the Owner. Contract Documents may show approved staging and stockpiling locations. Notify Owner within 48 hours for approval of staging and stockpiling sites not shown on the Contract Drawings.

18. SECURITY

The Contractor shall provide all security measures necessary to assure the protection of equipment, materials in storage, completed work, and the project in general.

19. CLEANUP

Cleanup for each item of work shall be fully completed and accepted before the item is considered final. If the Contractor fails to perform cleanup within a timely manner the Owner reserves the right to withhold final payment.

Review these Contract Documents for additional Final Cleanup specifications for specific measures, associated with Contractor responsibilities and final payment.

20. ACCESS DURING CONSTRUCTION

Provide access to all public and private roadways and approaches within the project throughout the construction period.

Provide emergency access at all times within the project throughout the construction period.

21. CONSTRUCTION TRAFFIC CONTROL

The Contractor is responsible for providing safe construction and work zones within the project limits by implementing the rules, regulations, and practices of the Manual on Uniform Traffic Control Devices, current edition.

22. SANITARY FACILITIES

There is an outhouse on site that can be used, users shall provide their own TP. In the event the outhouse is out of service, provide on-site toilet facilities for employees of Contractor and Sub-Contractors and maintain in a sanitary condition.

23. CONTRACT CLOSEOUT

The Contractor's Superintendent shall maintain at the project site, a "Record Set of Drawings" showing field changes, as-built elevations, unusual conditions encountered during construction, and such other data as required to provide the Owner with an accurate "as constructed" set of record drawings. The Contractor shall furnish the "Record Set" to the Project Representative following the Final Inspection of the Project.

The Contractor's final payment will not be processed until the "Record Set" of drawings are received and approved by the Project Representative.

24. MEASUREMENT AND PAYMENT

Review these Contract Documents for additional Measurement and Payment specifications for definitions. Quantities are listed on the Bid Proposal for Payment Items. Additional material quantities, volumes, and measurements may be shown on the Contract Document drawings and/or specifications.

Unit Price quantities and measurements shown on the Bid Proposal are for bidding and contract purpose only. Quantities and measurements supplied, completed for the project, and verified by the Project Representative shall determine payment. Each unit price will be deemed to include an amount considered by the Contractor to be adequate to cover Contractor's overhead and profit for each bid item.

The Owner or Contractor may make a Claim for an adjustment in Contract Unit Price if the quantity of any item of Unit Price Work performed by the Contractor differs materially and/or significantly (increase or decrease by 50%) from the estimated quantity indicated on the Bid Proposal.

Lump sum bid item quantities will not be measured. Payment for these lumpsum bid proposal items will be paid in full amount listed on the Bid Proposal when accepted by the Project Representative, unless specified otherwise.

END OF SECTION

01 01 00 – SUMMARY OF WORK

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

PART 1GENERAL

1.4 CONTRACTOR USE OF PREMISES

Add the following:

E. Utilize adjacent parking areas for Contractor staging and stockpiling of materials. Maintain public access as identified on the project drawings.

END OF SECTION

01 05 00 - FIELD ENGINEERING

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

PART 3EXECUTION

Add the following:

1.3 CONSTRUCTION SURVEY

A. Engineer will provide survey control (northing/easting) and benchmarks (local datum) for all designed alignments, radius points, profiles, and elevations as shown on the project drawings.

B. Contractor will be responsible for setting slope stakes and/or grade stakes based on Owner provided elevation staking. Limit grade stake tolerances to +/-0.02'.

PART 4MEASUREMENT AND PAYMENT

Add the following:

A. Contractor construction surveying will not be measured for payment and is considered incidental to other bid items in this contract.

END OF SECTION

01 40 00 - CONTRACTOR QUALITY CONTROL AND OWNER QUALITY ASSURANCE

PART 3EXECUTION

3.1 GENERAL

The Contractor is responsible for providing all quality assurance testing by an independent testing agency. The Contractor will pay for all quality assurance testing by an independent testing agency.

PART 4MEASUREMENT AND PAYMENT

4.1 PAYMENT FOR TESTING

The Contractor will pay for all quality control testing. The Contractor will pay for all quality assurance testing by an independent testing agency. The Contactor will pay for all associated re-testing efforts (both quality control and quality assurance).

END OF SECTION

01 45 00 - MOBILIZATION/DEMOBILIZATION

PART 1 GENERAL

1.1 DESCRIPTION

A. This item shall consist of the prepatory work and operations necessary performed by the Contractor for the movement of personnel, equipment, supplies, and incidentals to and from the work site. The work includes those actions necessary for obtaining necessary permits required for mobilization; for the establishment of all offices and facilities necessary to work on the project; for premiums on contract bonds; for insurance for the contract; and for other work on the various items on the project site. Mobilization costs for subcontracted work shall be considered to be included.

B. Contractor's cost for administration, bonding, insurance, and site documents shall be included in mobilization and shall not be paid as a separate item.

C. All equipment moved to the project sites shall be in good mechanical condition and free of fuel, oil, lubrication, or other fuel leaks. The Contractor shall immediately remove any equipment potentially or actually discharging environmentally damaging fluids.

D. All equipment moved to the project sites shall be thoroughly cleaned before it is brought to the sites to prevent the introduction of weed seeds. Equipment removed from the sites may not be returned to the sites again until it is thoroughly cleaned again.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. There will be no direct measurement of this item.

4.2 PAYMENT

B. Partial payments for mobilization/demobilization will be made based on the lump sum bid price as follows:

- 25% of the amount bid for mobilization/demobilization when the Contractor has moved on-site and begun construction activities.
- 50% of the amount bid for mobilization/demobilization when 25% of the contract amount (exclusive mobilization/demobilization) has been completed.
- 75% of the amount bid for mobilization/demobilization when 50% of the contract amount (exclusive mobilization/demobilization) has been completed.
- 100% of the amount bid for mobilization/demobilization when 75% of the contract amount (exclusive mobilization/demobilization) has been completed.

END OF SECTION

01 75 00 - FINAL CLEANUP

Added Section.

PART 1 GENERAL

1.1 DESCRIPTION

A. This work consists of final cleanup of the project site prior to final acceptance.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 CONTRACTOR RESPONSIBILITES

The contractor shall be responsible for final clean up at the end of the project to a level satisfactory to the owner. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. Re-seeding or re-sodding, or other re-surfacing may be necessary to repair any construction related impacts or damage.

All survey markings, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess pavement, concrete, gravel, soil, or other construction materials not intended for permanent use shall be removed.

All final slopes shall be dressed manually to remove woody debris, accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance. The contractor shall dress all gravel, pavement and concrete edges to eliminate abrupt edges and provide a smooth transition. All construction related temporary sediment control devices shall be removed as soon as practical.

PART 4 MEASUREMENT AND PAYMENT

4.1 PAYMENT

Unless specifically noted otherwise, all final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made.

END OF SECTION

01 80 00 EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 DESCRIPTION

A. This work consists of furnishing, constructing, and maintaining permanent and temporary erosion control and sediment control measures as shown on the project drawings and/or project related construction permits.

PART 2 PRODUCTS

2.1 GENERAL

A. Temporary and erosion control products utilized include but are not limited to backfill material; berms; brush barriers; erosion control blankets, bales, wattles, logs, rolls; erosion control culvert pipe; detention basins; fertilizer; geotextile; mulch; plastic lining; riprap; sandbags; seed; silt fence; and water.

2.2 EROSION CONTROL WATTLES

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *Sediment Stop*, manufactured by *North American Green*, or approved equal.

2.2 EROSION CONTROL BLANKETS

A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *BioNet® S150BN™*, manufactured by *North American Green*, or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Provide permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, environmental permits, and as directed by the Project Representative. These erosion control measures shall be designed, implemented, and maintained by the Contractor in accordance with Best Management Practices (BMPs) to control erosion and sediment release from the work site.

B. Install permanent and temporary erosion control measures according to the Storm Water Pollution Prevention Plan (SWPPP), if applicable, approved construction permits, and erosion control drawings.

C. When erosion control measures are not functioning as intended, immediately take corrective action.

PART 4 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT AND PAYMENT

A. Temporary Erosion Control Products will not be measured and considered incidental to other bid items in this contract.

END OF SECTION

01 80 10 - FLOATING TURBIDITY CURTAIN

PART 1 GENERAL

1.1 DESCRIPTION

A. This work consists of furnishing and installing a floating turbidity curtain to control sedimentation and suspended solids during underwater construction methods.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide a turbidity curtain with a geotextile material curtain, floatation boom, and anchorage system.

B. Provide a woven geotextile material as approved for turbidity containment by manufacture's recommendations.

C. An acceptable floating turbidity curtain product is *Layfield Turbidity Curtain Type 2.dot*, *Aer-Flo Inc., Tough Guy Floating Turbidity Barrier Type 2.dot* or approved equal. Contact www.layfieldgroup.com, (800) 796-6868 for Layfield products and (701) 222-3010 for Aer-Flo products.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install turbidity curtain parallel to the shoreline around the construction area of disturbance. Turbidity curtain installation is required prior to any and all work below the ordinary high water mark.

B. Extend the turbidity curtain to the lake or river bottom at all installation locations.

C. Provide flexible flotation buoys for the top of the turbidity curtain.

D. Provide an anchorage system consisting of load lines attached to the bottom of the turbidity curtain. Place anchors every 50' connected to the top of the floatation buoy.

E. Inspect the turbidity curtain daily to ensure sedimentation is controlled and proper function of the erosion control BMP. Immediately correct turbidity curtain deficiencies before continuing with work. If turbidity curtain deficiencies are not corrected, the Contractor may be in violation with approved construction permits and may be issued a stop work order by the Project Represent

F. Maintain turbidity curtain throughout all work activities until removal approval by the Project Representative. Allow sediment to settle or disperse for 12 hours after construction disturbance prior to removal.

PART 4 MEASUREMENT AND PAYMENT

4.1 GENERAL

A. Turbidity curtain will be measured and paid per lineal foot (LF) including all labor, equipment, materials, and incidentals required for the completion of the work.

END OF SECTION

01 80 20 SILT FENCE

PART 1 GENERAL

1.1 DESCRIPTION

A. Silt fences allow sediment to settle from runoff before water leaves the construction site. This work consists of furnishing and installing a temporary silt fence to control sedimentation and suspended solids during construction at appropriate locations and as shown on the Plans. Fence shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide a filter fabric geotextile material that meets the requirements of MPWS specification 02110 Geotextiles and as described herein.

B. Provide support posts spaced not greater than 10 feet center to center. Post shall be either wood posts with a cross sectional area of 1.5”x1.5” or a standard metal tee post.

C. Fasteners that attach the fabric to the posts shall be No. 10 gauge wire, 50 pound plastic zip ties or approved equal.

D. Material used to entrench the fabric into native soil shall be compacted aggregated base.

2.2 MATERIALS

Table 1. Materials and properties for silt fence construction

.

Woven Geotextile Fabric Width(in)	Min. Post Length (in)*	Min. Grab Tensile(lbs) (ASTM D 4632)	Min. Trapezoidal Tear Strength ((lbs) (ASTM D 4533)	Min. Permittivity (sec^{-1})(ASTM D4491)	Max. Apparent Open Size (mm)(ASTM D4751)
24	48	100	45	0.1	0.6
36	60	100	45	0.1	0.6

*Posts shall be metal tee post or hardwood posts with a minimum 1-1/2”x1-1/2” thickness
See Section 02110 GEOTEXTILES of MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS for additional information on ASTM Standards references listed in Table 1.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install silt fence parallel to the shoreline around the construction area of disturbance. Silt fence installation is required prior to any and all work below the ordinary high- water mark.

B. Silt fencing shall be placed below the toe of exposed and erodible slopes, down-slope of exposed soil areas, around temporary stockpiles, along streams and channels, and as shown on the Plans.

C. Fabric shall be attached to the post at the top of the fabric and at least three other points spaced evenly downward.

D. Post shall have a minimum embedment depth of 18” or to a depth that provides a stable silt fence.

E. Fabric shall be entrenched into the ground as shown on the on the Plans and to a minimum depth of 6 inches.

F. Fabric splices where required shall be constructed as shown on the Plans.

G. Inspect the silt fence daily to ensure sedimentation is controlled and proper function of the erosion control BMP. Immediately correct silt fence deficiencies before continuing with work. If silt fence deficiencies are not corrected, the Contractor may be in violation with approved construction permits and may be issued a stop work order by the Project Represent

H. Maintain silt fence throughout all work activities until removal approval by the Project Representative. Allow sediment to settle or disperse for 12 hours after construction disturbance prior to removal. Sediment shall be removed when sediment accumulation reaches 1/4 of the barrier height.

PART 4 MEASUREMENT AND PAYMENT

4.1 GENERAL

A. Silt Fence will be measured and paid for on a per lineal foot basis.

END OF SECTION

2 00 00 - DIVISION 02 - EXISTING CONDITIONS

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

AS-BUILT DRAWINGS: Per Section 01 00 00 - General Requirements.

SCOPE: Complete all Site Development Work as shown on the Drawings and as specified.

CONDITIONS AT SITE: Visit the site. Examine and note all conditions as to the character and extent of Work involved. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation. Maintain all bench marks, control monuments, and stakes, whether newly established by Surveyor or previously existing. Protect from damage and dislocation. If necessary to disturb existing bench marks, re-establish in a safe place.

PERMITS & ORDINANCES: Procure and pay for all necessary permits or certificates required by local authorities having jurisdiction over the Work. Comply with all Federal, State and Local Laws.

COORDINATION: Cooperate and coordinate the Work with the various Sub-contractors whose work might be affected by operations.

ADJACENT PROPERTY: Restore any damage to adjacent properties, streets, and the like caused by operations of this Division to original condition without additional cost to the Owner.

TESTS: The Foundation Engineer who prepared the Soils Report (if applicable) shall perform all tests and inspections required by this Division. Relative compactions shall be determined as specified in ASTM D698. Owner will pay for passing tests; Contractor pays for failed tests.

EXISTING UTILITIES: Where existing utilities not shown on the Drawings are encountered: support, shore up, protect same and immediately notify Owner. Allow entrance, opportunity, and ample time for measures necessary for continuance and/or relocation of such services. Where noted on Drawings, cut and cap all street connections encountered in the excavating along curb line and mark location so they can subsequently be located and re-connected as required.

LAYOUT: Layout and Work under this Division shall be made by competent personnel experienced in surveying. If any discrepancies are found by Contractor between the Drawings and actual conditions at the site, Architect reserves right to make such minor adjustments in Work specified as necessary to accomplish the intent of the Contract Documents without increased cost to the Owner.

CLEAN-UP: Remove from the Site all rubbish, debris, etc. resulting from Work in this Division, except as otherwise specified above and per Section 01 00 00 - General Requirements.

END OF DIVISION

02 24 20 - RIP RAP

GENERAL REQUIREMENTS: Per DIVISION 31 – EARTHWORK

SCOPE OF WORK: Work includes removing existing rip-rap to allow for excavations and installation of new concrete foundations and structures, then replacing rip-rap around new structures, using existing, salvaged rock and fill materials.

EXECUTION:

SUBSURFACE PREPARATION:

A. The subgrade surfaces on which the riprap or bedding course is to be placed shall be cut or filled and graded to the lines and grades shown on the drawings.

B. When fill to subgrade lines is required, it shall consist of approved materials and shall conform to the requirements of the specified class of fill.

C. Riprap shall not be placed until the foundation preparation is completed and the subgrade surfaces have been inspected and approved by the Technician.

EQUIPMENT-PLACED ROCK RIPRAP:

A. The rock shall be placed by equipment on the surfaces and to the depths specified.

B. The riprap shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials.

C. The rock shall be placed in a manner that will insure that the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks.

D. Riprap shall be placed in a manner to prevent damage to structures. Hand placing will be required to the extent necessary to prevent damage to the permanent works.

HAND – PLACED RIPRAP:

A. The rock shall be placed by hand on the surfaces and to the depths specified. It shall be securely bedded with the larger rocks firmly in contact one to another.

B. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock.

C. Flat slab rock shall be laid on edge.

FILTER LAYERS OR BEDDING:

A. When filter layers or bedding beneath riprap is specified, the filter or bedding material shall be spread uniformly on the prepared subgrade surfaces to the depth specified.

B. Compaction of filter layers or bedding will not be required, but the surface of such layers shall be finished reasonably free of mounds, dips or windrows.

C. When a geotextile filter is specified, the material used shall be non-woven and meet the requirements as outlined in Table 1.

    a. Geotextile shall be joined by over-lapping a minimum distance of 18 inches.

    b. Anchoring of the fabric is not required but care shall be taken to minimize displacement.

D. Rock riprap shall not be dropped from a height greater than three feet on geotextile.

E. Sufficient hand work shall be done to produce a dense section with a neat and uniform surface.

TABLE 1. REQUIREMENTS FOR NONWOVEN GEOTEXTILES

PROPERTY	TEST METHOD	Class I	Class II
Weight - Typical	ASTM D-5261	8.0 oz/sy	10 oz/sy
Tensile Strength	ASTM D-4632	205 lbs	230 lbs
Elongation @ Break	ASTM D-4632	50%	50%
Mullen Burst*	ASTM D-3786*	350 psi	500 psi
Puncture Strength*	ASTM D-4833*	110 lbs	120 lbs
CBR Puncture	ASTM D-6241	500 lbs	700 lbs
Trapezoidal Tear	ASTM D-4533	80 lbs	95 lbs
Apparent Opening Size	ASTM D-4751	80 US Sieve	100 US Sieve
Permittivity	ASTM D-4491	1.35 Sec-1	1.2 Sec-1
Water Flow Rate	ASTM D-4491	90 g/min/sf	80 g/min/sf
UV Resistance @ 500 Hours	ASTM D-4355	70%	70%

*Historical averages (current values not available): Mullen Burst Strength ASTM D-3786 is no longer recognized by ASTM D-35 on Geo-synthetics as an acceptable test method. Puncture Strength ASTM D-4833 is not recognized by AASHTO M288 and has been replaced with CBR Puncture ASTM D-6241.

Use Class I for d50 ≤ 15” / Use Class II for d50 ≥ 16”

SUBMITTALS REQUIRED

- Geotextiles
- The Contractor shall designate in writing the source from which they intend to obtain rock if not salvaged from site.
- When other than pre-approved rock sources are selected for use, site specific test results shall be submitted demonstrating compliance with Section 2 of this specification.

Submittals are to be received by the Contracting Officer a minimum of 15 days prior to the start of placing rock material.

END OF SECTION

02 30 00 - Subsurface Investigation

GENERAL REQUIREMENTS: Per DIVISION 02 – EXISTING CONDITIONS

GENERAL:

A. A soils investigation report has been prepared for the site of this Work by **RAWHIDE ENGINEERING, INC.** and is dated July 31, 2018. The soils investigation report may be inspected at the office of the Architect, and copies may be obtained at the cost of reproduction and handling upon request.

B. This report was obtained only for the Structural Engineer's use in design and is not a part of the Contract Documents. The report is available for the Bidder's information but is not a warranty of subsurface conditions. Bidders should visit the site and acquaint themselves with existing conditions.

C. A soils engineer will be retained by the Owner to perform soils inspection and testing. Re-adjust work performed that does not meet technical or design requirements but make no deviation from the Contract Documents without specific written approval from the Structural Engineer.

END OF SECTION

03 00 00 DIVISION 3 – CONCRETE

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

SCOPE: Supply/install all Concrete work as shown on the Drawings and as specified herein.

SHOP DRAWINGS: Per Section 01 00 00 - General Requirements, submit Shop Drawings showing bending and placing of all imbedded items. Drawings shall include diagrammatic elevations of all walls at a scale sufficiently large to show clearly the position and erection marks of marginal bars and their dowels and splices.

REFERENCE STANDARDS: Comply with all applicable Federal, State and Local codes, safety regulations, Portland Cement Association Standards, "Manual of Standard Practice for Detailing Reinforced Concrete Structures", American Welding Society (AWS), Vermiculite Institute Specifications, and any others referred to herein.

COORDINATION:

A. Obtain information and instructions from other Trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so provision for their work can be made without delaying the Project.
B. Do any cutting and patching made necessary by failure or delay in complying with these requirements, at no cost to Owner.

TESTS AND INSPECTIONS:

A. The Owner shall pay costs of laboratory tests/inspections directly to the Testing Agency. Owner will pay for passing tests; Contractor pays for failed tests.

B. The Contractor shall: Take three (3) identical test cylinders as directed by the Engineer, mark test cylinders and store properly before delivering to Testing Agency and be responsible and pay for delivery of all required concrete specimens to the Testing Agency at the proper time.

C. Inspection of Reinforcing Steel and Concrete Placing: Before any concrete is poured on any particular portion of Project, reinforcing steel will be checked and approved by Engineer. Correct any errors or discrepancies before concrete is placed. Such checking and approval shall not relieve Contractor from his responsibility to comply with the Contract requirements.

GENERAL:

A. Produce concrete of required consistency and strength to present appearance satisfactory to the Architect.

B. Use only one brand of cement unless otherwise authorized by Architect.

C. Place all pipe sleeves, anchors, bolts, angle frames, inserts, supports, ties and other materials in connection with concrete construction and secure in position before concrete is placed.

D. Store materials delivered to the job and protect from foreign matter and exposure to any element which would reduce the properties of the material.

E. Pour no concrete unless air temperature is at least 40 deg F & rising. When temperature cannot be expected to remain above 40 deg F for at least (3) days, protect from freezing by covering with insulating materials, providing heating devices or other suitable means subject to approval by Engineer. Temperature of concrete at time of pouring shall be between 50 deg F to 75 deg F.

CONSTRUCTION JOINTS: Location and details of construction joints shall be as indicated on Drawings, specified, or as approved by Architect. Locate so as not to impair the strength of the structure. Submit drawings with construction joints clearly defined, and schedule of pouring operations for approval before starting concreting.

CONTROL JOINTS: Provide as indicated on Drawings.

PATCHING AND CLEANING:

A. After forms are removed, remove projecting fins, bolts, form ties, nails, etc. not necessary for the Work or cut back one inch from the surface. Joint marks and fins in exposed Work shall be smoothed off and cleaned.

B. Repair defects in concrete work. Chip voids and stone pockets to a depth of one inch or more as required to remove all loose material. Voids, surface irregularities, chipped areas, etc., shall be filled by patching, gunnite or rubbing, as directed by Architect. Repaired surfaces shall duplicate appearance of un-patched work.

C. Clean exposed concrete surfaces and adjoining work stained by leakage of concrete.

CLEAN-UP: In addition to the requirements of Section 01 00 00 - General Requirements, clean-up all concrete and cement work on completion of this project of the Work, except protective coatings or building papers shall remain until floors have completely cured or until interior partitions are to be installed.

END OF DIVISION

03 11 00 - Concrete Forming

GENERAL REQUIREMENTS: Per DIVISION 03 – CONCRETE

GENERAL:

A. Provide complete forms of such strength and construction as to prevent any spread, shifting, or settling when concrete is deposited, and tight enough to avoid any leakage or washing out of cement mortar.

B. Remove all dirt, chips, sawdust, rubbish, water, etc., from forms by water hosing and air pressure before any concrete is deposited. Leave no wooden ties or blocking in concrete except where indicated for attachment of other work. Leave lowest board of forms along walls loose or provide clean-out pockets. At any columns and pilasters, provide holes in forms at bottom for cleaning purposes. Leave openings and holes open until just before concrete is poured.

C. Provide openings for the introduction of vibrators wherever necessary. Where required on account of excessive drop, or required by Architect, provide elephant trunks or side openings to receive concrete.

D. Architect will cooperate with Contractor in the matter of removing forms and shoring as early as possible. The length of time forms must remain in place depends on the rate of time required for concrete to obtain a proper strength and on construction loads that will be placed on concrete.

E. On removal of forms, all bolts, wires for anchoring, etc., shall be either removed, cut off to lengths as directed or left in place for anchorage of other work as specified.

F. Forms to be reused shall be in good condition and thoroughly cleaned before being reused.

G. Provide 3/4-inch chamfer at any wall, column and vertical corners unless otherwise shown.

MATERIALS:

Slabs, Walls and Exposed Concrete: Forms for flat exposed surfaces shall be 5-ply Exterior B-B (Concrete Form) panels. See requirements for thickness hereinafter. Panels with raised or separate face veneers shall not be used for exposed concrete.

Other Forms: Except where otherwise specified, shown or noted, forms for other concrete surfaces shall be constructed of Douglas Fir, smooth surfaced on the contact side, culled for loose knots and/or undesirable defects. Form Ties and Spreaders shall be metal, flat bar or cone nut type. No wood spreaders will be permitted. “Nominal” length ties NOT ACCEPTED – 8” walls are to be full 8” thick.

Round Tubular Concrete Forms: Equal to **SONOCO *Sonotube***, paperboard, spirally wound and laminated with interior plastic coating moisture barrier, one-piece, one-time use. Place and brace as recommended by manufacturer depending on size and conditions. Erect forms plumb; do not use forms that are out of round, deformed or damaged. Protect from water damage prior to use. Place concrete per 03 30 00 - Cast-in-Place Concrete; do not vibrate or pound on exterior of forms, do not touch interior of forms with vibrator or tamping rods. Remove forms after concrete is properly set. NOTE: These are not to be used for the main pier footings of the fishing landing, only for incidental bollards and related.

Optional Forming Systems: Pre-engineered steel, aluminum or composite form systems in good condition may be used in lieu of forming specified above. Form Sealer shall be **PROTEX *Procoat*** or equal.

Rough Hardware: Nails, bolts, screws, anchors, etc., as shown or needed shall be furnished and set.

Steel Culvert: 30” dia., 2.67 x 1/2”, 16 ga. galvanized culvert in 20’ sections. Provide all necessary sealants, gaskets, joints and fittings necessary for a complete, watertight system. Manufacturer to be a member of NCSPA with pipe meeting MDoT specifications.

END OF SECTION

03 30 00 CAST – IN – PLACE CONCRETE

GENERAL REQUIREMENTS: Per DIVISION 03 – CONCRETE

DESIGNING AND PROPORTIONING:

A. The concrete shall: have the lowest slump compatible with placement requirements and workability. Work readily into corners and angles of forms and reinforcement without excessive vibration and without permitting materials to segregate or free water to collect on surface.

B. Provide a ticket for every load of concrete. Contractor is to maintain a file on all load tickets and, upon request, provide a copy of all tickets to the Architect, Engineer, or Owner.

MIXING:

A. Use ready-mixed concrete complying with ASTM C94 and with the requirements of Contract Documents. Mix for a period of not less than ten (10) minutes; at least three (3) minutes of mixing period shall be immediately prior to discharging of the job.

B. Introduction of additional water after initial mixing not permitted unless water to cement ratio remains below 0.50.

C. Temperature of concrete at time of placing shall not exceed 75 degrees F.

WEATHER REQUIREMENTS: Do not mix or place when atmospheric temperature is below 40 degrees F. or when conditions indicate temperature will fall below 40 degrees F. within 72 hours. Concrete deposited shall have temperature not less than 60 degrees F. Reinforcement, forms and ground which concrete will contact shall be completely free of frost. Keep concrete and formwork at a temperature not less than 50 degrees F for not less than 72 hours after pouring. During below freezing temperatures allow concrete to gradually cool for 48 hours after the 72-hour period.

CONVEYING AND PLACING:

A. Notify Owner at least 24 hours before placing any concrete.

B. Carry on concreting once started, as a continuous operation until the section of approved size and shape is completed. Make pour cut-offs of approved detail and location.

C. Handle concrete as rapidly as practicable from mixer to place of deposit by methods which prevent separation or loss of ingredients. Deposit as nearly as practicable in final position to avoid re-handling or flowing. Do not drop concrete freely where reinforcing bars will cause segregation, nor drop freely more than six feet. Deposit to maintain a plastic surface approximately horizontal. In walls, deposit in horizontal layers not over eighteen inches deep. In pouring columns, walls, or thin sections of considerable heights, use openings in forms, elephant trunks, tremies, or other approved devices which permit concrete to be placed without segregation or accumulation of hardened concrete on forms or metal reinforcement above the level of the concrete. Install so concrete will be dropped vertically. At least two hours shall elapse after depositing concrete in walls or columns before depositing in heads over openings, supported beams, girders, or slabs.

D. Concrete that has partially hardened shall not be deposited in the Work.

E. Compact thoroughly using approved mechanical vibrators. Provide pour holes in forms to the extent necessary to insure filling or to allow necessary inspection. When starting a new pour or where conditions make puddling difficult, or where reinforcing is congested, place modified concrete with the same sand-cement proportions as elsewhere, but with not more than one-half the normal amount of course aggregate per yard. Use modified concrete to depth of not less than three inches when starting a new pour.

F. Use mechanical vibrator at each point of dump, and a stand-by vibrator in good working order, but not in use, shall be kept on the job until all concrete is placed.

PROTECTION AND CURING:

A. Keep forms sufficiently wet to prevent drying out of concrete for at least seven days after concrete is deposited.

B. Immediately after finishing slabs, cure with 2 mil poly sheet after misting slab. Leave sheet on as long as practical, but in no event less than 72 hours.

MATERIALS:

Portland Cement: Type I, Type II as specified shall conform to "Standard Specifications for Portland Cement" (ASTM C150). One brand of cement shall be used throughout the Work for structural purposes. Cement shall have been used for at least two years with the proposed aggregate without detrimental reaction. Contractor is required to obtain from the cement manufacturer and to furnish the Architect with satisfactory evidence of the kind and quality of all cement to be supplied.

Aggregates: Shall conform to "Standard Specifications for Concrete Aggregates" (ASTM C33), except as modified herein. "Gap-grading" of aggregates strictly prohibited. Provide even grading of all sizes of aggregate. Use as large of aggregate available to the particular plant. Use a minimum of 56-60% aggregate in the mix design. Water: Potable.

Air Entraining: Air entraining - ASTM C260. Equal to **BASF *MasterAir AE 200***. Use in all exterior concrete (and only as approved by Architect - permissible tolerance plus or minus 1%). Note: For concrete in transit more than 30 minutes consult Architect about increased air entertainment.

Reinforcing Fibers: Equal to **FIBERMESH *300-e3*** polypropylene, collated, fibrillated fibers added to concrete mix at the rate of 1.5 lb./cy.

Accelerator: Added at the batch plant and only with Architect's approval, Equal to **BASF MasterSet FP 20** non-chloride.

Form Release: Equal to **DAYTON SUPERIOR *Q-2 VOC*** (or ***Q-2 Winter Grade*** when applicable) to provide required separation and leave surface area with substantially the same appearance of untreated concrete.

Expansion Joints: 1/2" asphalt fiber joints, 1/2" **X-TECH** or equal polyethylene foam or as shown on Drawings.

Exterior Concrete Cure/Sealant: Equal to **DAYTON SUPERIOR *Anti Spall J33*** linseed oil base (2) coats: First coat is to be used as Cure/Seal. Second coat applied 28 days later.

Self-Leveling Sealant: Equal to **SIKA *Sikaflex 1c SL***. Seal all exterior concrete joints and interior joints not receiving finish flooring.

Expansion Joint Covers: Equal to **RIGHT POINTE *Plastic Void Cap Strip Expansion Joint (EXPJ-006)*** or **WR MEADOWS *Snap-Cap***. Use in depths and widths as noted on drawings; typically match width to fiber joint material width (1/2" minimum, depth to be 1/2" minimum).

Control Joint Form: Equal to **MASCO *Zip Strip***, for 4" slabs use ***CT 112Z*** 1-1/2" depth penetrating 1/3 the thickness of the slab; for 6" slabs use ***CT 2Z*** 2" depth penetrating 1/3 the depth of the slab. Install per manufacturer's directions in straight lines using a rigid guide rail. This method may be used in place of tooled joints where finish flooring is to be installed.

Screed Supports: Equal to **MASCO *MegaScreed - Plastic AS Yoke*** plastic screed support yoke or ***Pinhead - Metal CFA PH*** metal support yoke used with rebar pins when pouring over soils or other gravel/sand fill or base materials. When pouring over rigid surface forms, decking, or over waterproof membranes, use **MASCO *Adjustable Chairs*** or ***Tapped Screed Posts*** with ***Brackets***, and ***Pads*** to prevent penetrations in forms or membranes. All systems above are intended for use with temporary pipe screeds.

STRENGTHS, SLUMPS, CEMENT CONTENT:

A. A. Use	28 Day Strength	Max. Slump	Min. Cement/CY
Footings & Foundations	4,000 psi	4”	5.0 Sack
Elevated Slab	4500 psi	4”	7.0 Sack
a. Exterior Flatwork	4,000 psi	4”	6.0 Sack Fibermesh

B. Water Content: The materials shall be mixed with a minimum amount of water to produce a concrete of such consistency as will allow it to flow sluggishly into forms, around reinforcing steel and completely fill forms with the aid of thorough vibrating and tamping. The water/cement ratio shall not exceed 0.50. Slumps shall not, under any conditions, exceed those given except where water reducer is used, in which case slumps may be double that shown.

C. Curing: Cure all flatwork with 2-6 mil sheet poly, misting the slab to get the poly to adhere to the surface. Leave sheet in place seven days. Water cure with burlap as specified above. Use of specific curing compounds by approval only.

SIDEWALKS AND EXTERIOR SLABS: ALL Sidewalks and slabs shall be 1.5# **FIBERMESH *300-e3*** reinforced concrete finished monolithic. After troweling exterior slabs shall receive a broom finish and be scored with lines, as shown on Drawings. Scored lines will be formed by tooling with a concrete groover, NOT saw cutting, and shall be approximately one third the slab thickness in depth, or 1-1/4” for a 4” thick slab, and shall be at least 1/8” wide, but no more than 1/4” wide. Exterior slabs shall be formed with slopes as indicated, as directed or as necessary to insure proper drainage. Seal all exterior concrete with specified sealant after 28 days cure.

PRECAST PLATFORM: Refer to Drawings. Use experienced precast supplier such as **BILLINGS PRECAST** of Billings, Montana. General Contractor to coordinate with all trades, Engineer, and Owner.

FINISHER CERTIFICATION: All Flatwork will be finished by experienced craftsmen certified as ***ACI Concrete Flatwork Finisher***. When requested, provide copies of certificates for finishers who are not listed on the ACI website as certified.

END OF SECTION

05 00 00 DIVISION 5 – METALS

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

SCOPE: Refer to Drawings. Supply and install steel structural system and handrail as shown on Drawings and as specified herein including all anchorage devices and required appurtenances.

SHOP DRAWINGS: Per Section 01 00 00 - General Requirements, submit Shop Drawings of all Work herein showing layouts, sizes, methods of construction and installation, including sizes and types of all fastening devices.

GUARANTEE: Per Section 01 00 00 - General Requirements.

MEASUREMENTS: Verify all dimensions by taking field measurements; proper fit and attachment of all items is required.

COORDINATION: Coordinate with other trades for prompt delivery of all materials needed for erection or installation. Identify all bolts or other loose materials.

DELIVERY AND STORAGE: Deliver and store materials in dry protected areas. Protect from rusting and other damage. Remove any damaged items from site and replace at no cost to Owner.

REFERENCE STANDARDS: Except where provisions of these Specifications are more exacting, Work of this Section shall comply with all applicable provisions of the following:

A. Standard Specifications for the Design and Fabrication of Structural Steel for Buildings, of the American Institute of Steel Construction (AISC).

B. Code of Standard Practice for Steel Buildings and Bridges, of AISC Code for Welding in Building Construction, D1.1 of the American Welding Society.

C. Specifications for Structural Joints using ASTM A325 or A490 Bolts by the Research Council on Riveted and Bolted Structural Joints. D. AISC “Manual of Steel Construction”.

E. “Standard Specifications for Open Web Steel Joints” adopted by the Steel Joint Institute & AWS.

FABRICATION:

A. Standard commercial products conforming to requirements of Drawings and Specifications may be used subject to approval of Architect. Bolt with proper size bolts. Nuts shall be drawn tight and end threads upset. Screws and bolts shall be standard, and washers provided where necessary.

B. Build anchors and other connecting members required to concrete into concrete as Work progresses to avoid unnecessary cutting and drilling.

C. Execute all Work using skilled metal workers only. Use only certified welders. Do only such work at the site as cannot reasonably be performed in the shop. Make cuts, bends, punching and drilling accurate, neat and properly located. Grind and file smooth all parts exposed to view; leave exposed surfaces free of fabrication marks. Make members true to length to allow assembly without fillers.

D. Welding per AWS specifications; apply “**GALVAWELD**” or equal to surfaces welded after galvanizing.

E. Make fabrication of all structural steel shapes conform to AISC Standards.

F. Furnish all necessary templates and patterns required by other trades and any items built into Work under other Sections. Supervise and be responsible for proper location and installation of built-in items. Deliver items required to be embedded in concrete or built into partitions and other locations to respective Contractors. Provide holes and connections for work of other trades and make necessary connections.

G. When possible, fit and shop assemble, ready for erection. Shop and field connections: riveted, welded or attached with screws, countersunk and finished flush where exposed.

H. Provide positive insulation of metals from contact with masonry and different metals from contact with each other where necessary to prevent corrosion.

ERECTION: Install material under experienced supervision and in strict accordance with manufacturer's erection details and instructions.

A. Protect all supports, fastenings and backs of panels against corrosion and effects of moisture. All supports, and fastenings shall meet building code requirements.

B. Accurately place and align units with all joints plumb, level and true.

C. Attach and positively fasten but allow for expansion and contraction. Conceal all fastenings except where specifically indicated otherwise.

CLEANING AND PROTECTION: Clean all pre-finished metal for inspection. Protect Work at all times from stains, scratches or any other damage until completion of project.

CLEAN-UP: Per Section 01 00 00 - General Requirements.

END OF DIVISION

05 50 00 - Metal Fabrications

GENERAL REQUIREMENTS: Per DIVISION 05 – METALS

WORK IN OTHER DIVISIONS: 09 90 00 – Painting, 09 96 00 – Powder Coating.

SHOP PRIMING: Shop paint all structural metal fabrications unless otherwise noted. Contact surfaces to be welded shall not be coated within 3" of the weld, prior to welding. Thoroughly dry and clean surfaces when paint is applied. Coat all joints and crevices thoroughly.

A. Clean iron and metal by removing all oil and grease with petroleum naphtha or other approved solvent. Clean all surfaces to be primed of scale, dirt and rust by steel scrapers, wire brushes or abrasive blasting.

B. As soon as possible after cleaning, Shop Coat with Primer by spray, roller, or brush. Thoroughly work paint into all joints by brush. Overall application on ferrous metals of **PPG *Speedhide Int/Ext Rust Inhibitive Steel Primer*** in ***6-208 Red*** or ***6-212 White*** depending on final finish. Alternate primer is **PPG *Amercoat 5108 Alkyd Shop Primer*** in ***AT51082 Gray*** or ***AT51087 Oxide Red*** for use on all metals.

C. Give any built-in the field portions one coat of primer on all welded or abraded parts after installation and assembly.

D. Apply second and subsequent coats as needed for full coverage and penetration leaving no bare or thin areas.

ITEMS (does not include structural steel):
Work required under this Section that is not described in detail below shall be constructed in accordance with the detailed Drawings and/or approved Shop Drawings.

Pipe Handrails: 1-1/2" Standard pipe, or heavier, as shown including required brackets. Provide all required Ells, Tees and end caps on handrails to meet accessibility and code requirements.

Bollard Posts:

A. Standard steel pipe, sizes noted on drawings.
B. 5/16" Aircraft Cable with thimbles and non-ferrous swages.
    a. Form loops and mechanically set using five (5) swages using swaging tool, leave loose exposed end no more than three (3) diameters beyond end of swage block.

Note: Handrails and Bollards are to be powder coated, DO NOT PRIME paint.

END OF SECTION

07 00 00 - DIVISION 07 - THERMAL & MOISTURE PROTECTION

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

SCOPE: Supply and install all thermal and moisture protection work as shown on Drawings and as specified herein.

STANDARDS: Have all work done by applicators approved by the manufacturer of the materials and installed in strict accordance with manufacturer's directions.

COORDINATION: Work closely with Sheet, Plumbing and Mechanical Contractors and any other adjacent trades. Whenever the water tightness of the roof is dependent on the work of other trades, assume full responsibility for the finished installation of the integrated assembly. Supervise the sheet metal installer's work and all other adjacent trades as necessary to assure satisfactory fabrication and watertight placement.

INSPECTION: Examine all subsurfaces to receive Work and report in writing to General Contractor, with a copy to Architect, any conditions detrimental to Work. Failure to observe this injunction constitutes a waiver to any subsequent claims to the contrary and holds the Contractor responsible for any corrections Architect may require. Commencement of Work will be construed as acceptance of all subsurfaces.

DELIVERY AND STORAGE: Deliver materials to job site in manufacturer's original unopened packaging. Fully protect against wetness or damage while temporarily stored. Materials designated for a specific application shall be the products of one manufacturer.

PREPARATION: Make all subsurfaces free from material projections, dust loose and foreign materials and any other obstructions, presenting a smooth plane, ready for installation.

WEATHER: Conduct no waterproofing operations when water in any form is present on the surface or when materials are damp, wet or likely to be wetted by the elements.

PROTECTION: Take precautions to protect all Work in this Division, both during and after installation, from damage of any kind.

WATERSTOPPING: At the end of each day's work the work performed during that day shall be sealed at the edges and well covered to prevent moisture from getting under the material.

CLEAN-UP: Per Section 01 00 00 - General Requirements.

END OF DIVISION

07 90 00 - Joint Protection

GENERAL REQUIREMENTS: Per DIVISION 07 – THERMAL & MOISTURE PROTECTION

GUARANTEE: Per Section 01 00 00 - General Requirements, Work guaranteed for a period of FIVE years.

APPLICATION: Apply materials in strict accordance with manufacturer's printed directions, observe manufacturer's requirements regarding temperature control, usability of materials and protection of adjacent surfaces. Clean surfaces to receive sealant with solvents and prime as recommended by sealant manufacturer. Make sealing surface slightly concave, free of wrinkles and skips, uniformly smooth and with perfect adhesion along both sides of joint. Surface is to be shaped with the aid of a formed specialty tool such as **DAP *18570 Dap Cap Caulk Finishing Tool***, or **DAP *09125 PRO Caulk Tool Kit***. Protect adjacent surfaces from excess material by masking parallel to the joint both sides; leave joints in a clean, neat condition. *Defective joints shall be removed, cleaned and replaced at no additional cost to Owner at any time during the five-year warranty period*.

MATERIALS:

Self-Leveling Sealant: Equal to **SIKA *Sikaflex-1c SL***. Use to seal all exterior joints and interior floor joints not receiving finish flooring.

Sealant: Equal to **SIKA *Sikaflex-15 LM*** against metal and **SIKA *Sikaflex-1a*** concrete to concrete, one-part polyurethane sealant, Primer as required for specific surfaces. Color as selected by Architect. Use on exterior joints requiring a durable waterproof joint.

APPLICATION:

A. Apply only to clean and dry surfaces, using a primers and cleaning agents as recommended by the manufacturer for the material being sealed.

B. All caulked joints are to have a smooth tooled “concave” surface (as described above). Irregular, flat or convex joints will be rejected.

C. All joints greater than 3/8” wide will be backed with a round poly rod to form a double concave shape sealant joint.

END OF SECTION

09 00 00 DIVISION 09 - FINISHES

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

SCOPE: Supply and install all Finish Work as shown on Drawings and as specified herein.

MEASUREMENTS: Verify all dimensions shown on Drawings by taking field measurements; proper fit and fastening of all components is required.

GUARANTEE: Per Section 01 00 00 - General Requirements.

COORDINATION: In all Work under this Division, coordinate with all other Trades whose work connects with, is affected or concealed by Finish Work. Before proceeding, make certain all required inspections have been made.

INSPECTION: Inspect surfaces to receive finishes before starting Work and do not start until surfaces are acceptable. Starting Work under this Division implies acceptance of surfaces.

DELIVERY AND STORAGE: Deliver all manufactured materials in original packages bearing manufacturer's name and brand. Use only one brand of each material throughout job. Store materials in a dry place.

STANDARDS: Comply with all applicable requirements of the following codes and references, latest edition, except where more stringent requirements are called for herein or by local codes:

A. Painting and Decorating Contractors of America Manual.

INSTALLER: Perform all Work herein by experienced applicators or installers with a minimum of FIVE (5) years of experience in the trade.

CLEAN-UP: Per Section 01 00 00 - General Requirements, remove all excess material, equipment and debris; dispose of away from premises. Leave Work in clean condition.

END OF DIVISION

09 00 00 – PAINTING & COATING

GENERAL REQUIREMENTS: Per DIVISION 09 – FINISHES

SAMPLES: Per Section 01 00 00 - General Requirements, submit samples of all types of finishes specified herein. Before Work is begun, Owner will furnish Contractor a color schedule of colors selected from manufacturer's stock colors.

SURFACE PREPARATION:

A. Protect and mask items not to be painted or remove prior to painting. If required to be removed, reposition after painting.

B. Make any exposed miscellaneous metal items, such as steel supports, anchors, bucks, hollow metal frames and the like clean, free of rust, dust, grease and dirt.

C. Wash any unprimed factory sealed galvanized metal with a solution of **GALVA-PREP *SG*** and **3M *Scotch-Brite*** pads; non-sealed galvanized metal may be solvent wiped, followed by an acid etch and water rinse.

D. Remove grease or oil with benzene or other manufacturer approved solvent or preparation product.

APPLICATION:

A. Do no exterior painting below 40 degrees F or at any temperatures within 5 degrees F of the dew point. Do not paint if temperature is less than 40 degrees F and falling or expected to fall. Refer to manufacturer’s product application requirements.

B. Paint all exposed surfaces of every member; paint anything inaccessible after installation before installation, if required to be painted.

C. Paint no items fitted with finish hardware until hardware has been temporarily removed.

D. Sand carefully between coats all finishes on smooth surfaces for good adhesion of subsequent coats.

E. Where coverage is incomplete or not uniform, provide an additional coat at no extra expense to Owner.

E. Each succeeding pigmented coat shall be distinguishably lighter than the previous coat.

G. Apply all coatings without reduction except as specifically required by label directions or required by this Specification.

H. Apply with brush, roller or spray and back-roll. Spray is allowed on metal surfaces.

MISCELLANEOUS PAINT ITEMS: Exterior exposed iron structural members.

MATERIALS: Provide commercial quality painting systems with specifications meeting or exceeding those scheduled below under Painting Systems.

COMPLETION AND CLEANING: On completion of Work, carefully clean hardware, etc., and remove all misplaced paint and spots or spills and leave Work in a condition acceptable to Owner.

PAINTING SYSTEMS: It is the intent of this Specification to establish procedure, quality, and number of coats; the Architect will determine the exact finish desired. Do not start priming or painting without having notified the Architect. All surfaces specified herein to receive 3 coats (primer + 2 finish) will receive 3 coats; there will be no exceptions. Tinting of primer is not allowed. First finish coat tinted a shade off of second coat. Equal to **SHERWIN-WILLIAMS** - products below are shown for reference to establish quality levels. Apply the following finishes to the areas designated,

TYPE 2 (ferrous metals, red iron framing, etc.)

First Coat: ***B50NZ0006 Kem Kromik Universal Metal Primer***
Second Coat: ***B54W00151 Pro Industrial Urethane Alkyd Enamel*** (Semi-Gloss) Third Coat: ***B54W00151 Pro Industrial Urethane Alkyd Enamel*** (Gloss)

OR

First Coat - ***B66A01320 Pro-Cryl Universal Primer*** (Low Sheen)
Second Coat - ***B66W01251 Pro Industrial DTM Acrylic*** (Eg-Shel)
Third Coat - ***B66W01151 Pro Industrial DTM Acrylic*** (Semi-Gloss)

END OF SECTION

09 96 60 - Powder Coating Finish

GENERAL REQUIREMENTS: Per DIVISION 09 – FINISHES

SAMPLES: Per Section 01 00 00 - General Requirements, submit samples of all types of finishes specified herein. Before Work is begun, Architect will furnish Contractor a color schedule of colors selected from manufacturer's stock colors.

SURFACE PREPARATION:
Powder Coat Finish: Prepare, treat, and coat ferrous metal to comply with resin manufacturer's written instructions and as follows:

A. Prepare all metal by thoroughly removing grease, oil, dirt, flux, and other foreign matter.

B. Prepare uncoated ferrous-metal surfaces to comply with SSPC-SP 5/NACE No. 1, White Metal Blast Cleaning.

   a. After cleaning apply conversion coating suited to the organic coating to be applied over it.

   b. Treat prepared metal with metallic-phosphate pretreatment, rinse, and seal surfaces.

C. Protect items not to be coated or remove prior to coating. If required to be removed, reposition after coating.

FINISHES:

A. Powder Coating System: Equal to **IFS *500FP*** semi-gloss thermosetting fluoropolymer type FEVE or PVDF, to meet or exceed the performance requirements of AAMA 2605.

C. Powder Coating: Apply in accordance with manufacturer's instructions.

   a. Apply two (2) coat finish consisting of zinc rich epoxy primer with minimum dry film thickness of 2 mils (.05 mm) per coat.

   b. Apply TGIC topcoat for a finished mil thickness (primer and topcoat) of 8 mils (.20 mm).

   c. Color to match RAL 8007 – Fawn Brown, or other with owner approval from Standard manufacturer colors.

END OF SECTION

31 00 00 DIVISION 31 - EARTHWORK

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

AS-BUILT DRAWINGS: Per Section 01 00 00 - General Requirements.

SCOPE: Complete all Site Drainage and Utility Work as shown on the Drawings and as specified.

CONDITIONS AT SITE: Visit the site. Examine and note all conditions as to the character and extent of Work involved. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation. Maintain all bench marks, control monuments, and stakes, whether newly established by Surveyor or previously existing. Protect from damage and dislocation. If necessary to disturb existing bench marks, re-establish in a safe place.

PERMITS & ORDINANCES: Procure and pay for all necessary permits or certificates required by local authorities having jurisdiction over the Work. Comply with all Federal, State and Local Laws. Contractor is responsible for developing a Storm Water Pollution Prevention Plan for the project.

COORDINATION: Cooperate and coordinate the Work with the various Sub-contractors whose work might be affected by operations.

ADJACENT PROPERTY: Restore any damage to adjacent properties, streets, and the like caused by operations of this Division to original condition without additional cost to the Owner.

TESTS: The Foundation Engineer who prepared the Soils Report (if applicable) shall perform all tests and inspections required by this Division. Relative compactions shall be determined as specified in ASTM D-698. Owner will pay for all passing tests; Contractor will pay for all failed tests.

EXISTING UTILITIES: Where existing utilities not shown on the Drawings are encountered: support, shore up, protect same and immediately notify Architect. Allow entrance, opportunity, and ample time for measures necessary for continuance and/or relocation of such services.Where noted on Drawings, cut and cap all street connections encountered in the excavating along curb line and mark location so they can subsequently be located and re-connected as required. Any existing utilities in the building envelope should be removed prior to constructing the building pad.

LAYOUT: Layout and Work under this Division shall be made by competent personnel experienced in surveying. If any discrepancies are found by Contractor between the Drawings and actual conditions at the site, Architect reserves right to make such minor adjustments in Work specified as necessary to accomplish the intent of the Contract Documents without increased cost to the Owner.

CLEAN-UP: Remove from the Site all rubbish, debris, etc. resulting from Work in this Division, except as otherwise specified above, per Section 01 00 00 - General Requirements.

END OF DIVISION

31 23 00 – EXCAVATION & FILL

GENERAL REQUIREMENTS: Per DIVISION 31 – EARTHWORK

GENERAL: All work under this section including materials and installation shall conform to **Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010 *Section 02200-Earthwork*** and this specification is incorporated by reference. Any bidder in doubt about these requirements can obtain a copy of the specific section in question from the Architect.

LOCATE CALL: In addition to requesting local utilities to locate underground utilities and per MCA 69-4-501 to 506 the contractor is required by State Law to notify a One-Call location service before all underground excavation. Notification must be received at least TWO (2) working days prior to excavation. Call 811 or 1-800-424-5555.

PUMPING AND DRAINAGE:

A. Develop engineered de-watering plan.

B. Keep all excavations, pits, trenches, footings, etc. entirely free from water.

C. Protect excavations from rain or water from any source during construction. Use suitable pumping equipment or other means as required by conditions. Continue pumping as necessary until completion of project or until released by engineer.

D. When operations are interrupted by unfavorable weather conditions, prepare areas by grading and compaction to avoid ponding and erosion.

EXCAVATION:

A. Excavate to depths noted on Drawings, as required for proper completion of all footings and other subgrade level Work and cut to sufficient size to provide ample room for the construction of forms, shoring, and bulk-heading as required.

B. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

    a. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials

C. Backfill any excess excavation under footings or slabs with structural fill at Contractor's expense.

D. Shore and brace excavations where necessary to prevent cave-ins, and in accordance with all safety codes and laws for Type A soils.

E. Excess material not needed for completion of Work is to be disposed of offsite by the Contractor.

F. Strip suitable topsoil and store separately for final grading.

FILL AND BACKFILL:

A. STRUCTURAL FILL:

    a. Structural fill (also referred to as Engineered Fill) is defined as any imported fill meeting the required gradation listed below. Contractor will be responsible for loading/unloading, hauling and placement of all structural fill.

    b. Material for all structural fill shall be non-expansive material.

c. Structural fill will be used beneath footings and should consist of dense gravel with sand and conforming to the following gradation and plastic index.

Sieve Size	Percent Passing
3-Inch	100% No.
4	25-65%
No. 200	<20%
Plastic Index	12 or less

c. Structural fill may be continuously inspected and shall be tested in 3 separate locations as directed for compliance.

e. All fill under interior slabs, paved areas, or specific footings will be structural fill.

F. Approximate plan quanities have been provided for fill to achieve subbase grade based on best available information. Subbase grade is defined as the bottom of geotextile/base course beneath the building and bottom of aggregate base course beneath pavement. Contractor to provide in place cubic yard unit cost for required fill quantities in excess of the plan estimates provided on the Project Drawings.

g. Structural fill will be placed in layers not exceeding 8” thick loose lifts. Compaction of each layer will be as follows within +/- 2% of optimum water content.

i. Structural Fill Beneath Foundations: 98% of ASTM D698

ii. Backfill Against Foundations: 95% of ASTM D698

iii. Utility Trench Backfill: 97% of ASTM D698

B. COMPACTED FILL:

a. Material for compacted fill will be selected from suitable on-site excavated material.

b. Existing fill material to be removed down to the native material and then replaced and compacted to ASTM D698.

c. All fill other than STRUCTURAL FILL will be compacted fill.

d. Compacted fill may be spot tested for compliance.

e. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

f. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

g. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

h. Compacted fill will be placed in layers not exceeding 8” thick loose lifts. Compaction of each layer will be as follows within +/- 2% of optimum water content.

i. Structural Fill Beneath Foundations: 98% of ASTM D698

ii. Backfill Against Foundations: 95% of ASTM D698

iii. Utility Trench Backfill: 97% of ASTM D698

B. TOPSOIL:

a. Provide clean imported topsoil with a textural classification of loam, sandy loan or silty loam.

b. Provide topsoil that is sufficiently fertile to sustain normal healthy plant growth and is noxious weed free.

c. Provide a minimum of 4” and a maximum of 6” of topsoil in seeded areas. Provide a minimum of 12” of topsoil in planting beds.

d. Compact all areas to receive seed, sod or plantings to 85% proctor density.

D. GRADING:

a. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

c. Site Rough Grading: Slope grades to direct water away from structures and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

i. Turf or Unpaved Areas: +/- 1”. ii. Walks: +/- 3/8”.

ii. Pavements: +/- 3/8”.

E. GRAVEL CUSHION: Provide 3/4” clean gravel under flatwork; depth of gravel per plans.

F. GEO-GRID: If called for on plans under paving base courses and engineered fill under footings, use **TENSAR *Biaxial GeoGrid BX1200*** or equal. **TENCATE *Mirafi RS580i*** or equal can be used where both a grid and filter fabric are called for.

FINISH GRADING: Perform all finish grading required as indicated or reasonably inferred to permit installation of Work of others or as shown on Drawings. Fine grade all topsoil areas to the lines, grades and elevations specified. Note areas to receive organic or mineral mulch or sod and adjust grades accordingly. Do not place topsoil until the designated areas are prepared and all construction work in the area is completed. Remove and dispose of all clods, rocks, large roots, litter, construction debris and all other foreign material from the topsoil before placement.

At completion of Work, entire site including any waste fill areas will be left in a clean and finished condition.

END OF SECTION

32 00 00 - DIVISION 32 - EXTERIOR IMPROVEMENTS

CONDITIONS OF THE CONTRACT and DIVISION 01, as indexed, apply to this Division.

AS-BUILT DRAWINGS: Per Section 01 00 00 - General Requirements.

SCOPE: Complete all Site Drainage and Utility Work as shown on the Drawings and as specified.

CONDITIONS AT SITE: Visit the site. Examine and note all conditions as to the character and extent of Work involved. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation. Maintain all bench marks, control monuments, and stakes, whether newly established by Surveyor or previously existing. Protect from damage and dislocation. If necessary to disturb existing bench marks, re-establish in a safe place.

PERMITS & ORDINANCES: Procure and pay for all necessary permits or certificates required by local authorities having jurisdiction over the Work. Comply with all Federal, State and Local Laws.

COORDINATION: Cooperate and coordinate the Work with the various Sub-contractors whose work might be affected by operations.

ADJACENT PROPERTY: Restore any damage to adjacent properties, streets, and the like caused by operations of this Division to original condition without additional cost to the Owner.

TESTS: The Foundation Engineer who prepared the Soils Report (if applicable) shall perform all tests and inspections required by this Division. Relative compactions shall be determined as specified in ASTM D-698. Owner will pay for all passing tests; Contractor will pay for all failed tests.

EXISTING UTILITIES: Where existing utilities not shown on the Drawings are encountered: support, shore up, protect same and immediately notify Architect. Allow entrance, opportunity, and ample time for measures necessary for continuance and/or relocation of such services.
Where noted on Drawings, cut and cap all street connections encountered in the excavating along curb line and mark location so they can subsequently be located and re-connected as required.

LAYOUT: Layout and Work under this Division shall be made by competent personnel experienced in surveying. If any discrepancies are found by Contractor between the Drawings and actual conditions at the site, Architect reserves right to make such minor adjustments in Work specified as necessary to accomplish the intent of the Contract Documents without increased cost to the Owner.

CLEAN-UP: Remove from the Site all rubbish, debris, etc. resulting from Work in this Division, except as otherwise specified above, per Section 01 00 00 - General Requirements.

END OF DIVISION

32 31 00 - Fences & Gates

GENERAL REQUIREMENTS: Per DIVISION 32 – EXTERIOR IMPROVEMENTS

GENERAL: Provide a temporary construction fence system including all miscellaneous fittings and accessories required to meet standards of the industry.

TEMPORARY PROJECT FENCE UP TO 8' HEIGHT:

A. General: Posts and rails to be ASTM F1043 Group 1C hot dipped galvanized. All fittings to be pressed steel or malleable iron and hot dip galvanized. Tie wires to be minimum 9 Ga. Aluminum or 11 Ga. galvanized steel. Mechanically drive all posts 3'-0" minimum into the ground. Fence to follow ground line.

B. As shown on Site Plan, provide a chain link fence as follows:

   a. Terminal Posts: 2.375" 3.12 lbs./ft posts at corners, ends, and at mid-point of runs exceeding 300'. Set posts in min. 12" diameter 42" deep concrete base. Provide standard caps, ties and diagonal bracing.

   b. Line Posts: 1.90" 2.28 lbs./ft line posts at 10'-0" O.C. maximum. Provide standard caps for top rail and fastening clips at 12".

   b. Rail & Post Braces: 1.66" 1.83 lbs./ft with 6" couplings at 21' max. Fabric tie wire spaced at 24" O.C. max.

   d. Fabric: Fabric woven from 9 Ga. ASTM A392 hot-dip galvanized after weaving (GAW) wire in 2" mesh knuckled under at both selvages.

   e. Gate Posts: 2.875" 4.64 lbs./ft minimum or larger as recommended by manufacturer for gate width and fence height.

   f. Gate Frames: 1.66" 1.83 lbs./ft tube with welded or fitted corners. Provide braces or trusses when necessary. Include all necessary hinges and fittings including latch. All parts galvanized.

   g. Barbed Wire (if applicable): Aluminum coated double strand 12 1/2 Ga. twisted wire with 14 Ga., 4 point round aluminum barbs spaced on 5" centers per ASTM A585. Provide all necessary fittings for 3 wire application.

END OF SECTION

32 90 10 – DRYLAND GRASS

GENERALREQUIREMENTS: Per DIVISION 32 – EXTERIOR IMPROVEMENTS

GENERAL:

A. All plants furnished by Contractor shall be true to name. Conform to "Standardized Plant Names" by American Joint Committee on Horticulture Nomenclature. All Work shall conform to applicable requirements of American Association of Nurserymen, Inc. Standards.

B. Provide plants of normal growth and uniform height, according to species, with straight trunks and well-developed leaders, roots and tops.

C. Provide legible labels attached to all plants, specimens, bundles, boxes, bales or other containers, indicating botanical genus, species and size of each.

GRADES: Grade of all finished planting areas shall, in general, be 2" lower than curb tops and sidewalks. Slope approximately 1" in ten (10) feet from sidewalk and determine slope between sidewalk and
adjacent grades. Crown any areas surrounded by sidewalks or curbs to provide proper drainage and pleasing appearance.

PREPARATIONOFSUBSOIL: When subgrade has been established by others and approved, smooth over to remove ridges and depressions so surface is parallel to finished grade.

PREPARATIONOFLAWNANDGROUNDCOVERAREAS:

A. Utilize salvaged topsoil conserved from clearing and grubbing operations to cover excavation and embankment slopes prior to fertilizing, seeding, or mulching. Any topsoil brought to the job shall be a fertile, friable natural sandy loam, without admixture of subsoil material. It shall be live soil and contain a normal amount of decomposed organic matter and shall be free from heavy alkaline soil, coarse sand, stones, lumps, tools, sticks, or other foreign matter.

B. Sub-grade: Finish sub-grade at bottom of 4" walks in preparation for 2" Topsoil.

C. 4" Topsoil: Install in two layers with the first layer approximately 3-1/2" depth, after which, specified dry-land seed mix specified below is applied. Second layer is approximately 1/2" installed after seeding the area. After topsoil has been spread, the area shall be lightly raked to remove all additional stones, roots, lumps or any other foreign material. The finished surface shall be loose, smooth and pulverized.

D. Finished topsoil should be 2" below sidewalks when completed.

DRY-LANDSEED: Utilize the following seed mix for all areas to be seeded.

Seed Name	% Pure Live Seed	Lbs. Per Acre
Western Wheatgrass	30	*
Bluebunch Wheatgrass	20	*
Hard Fescue	20	*
Slender Wheatgrass	15	*
Streambank Wheatgrass	15	*

* Drilled Rate = 25 lbs./acre, Broadcast and Hydroseed Rate = 50 lbs./acre

All seed is to be certified for minimum 98% purity and 90% germination by AOSA and USDA standards. Mix proportions are to be by rough seed count. To be applied to all trenches and excavated areas outside of the gravel parking area after they're compacted and graded.

DRY-LANDSEEDAPPLICATION:

A. Broadcast by hand or broadcast seeder onto loose topsoil that has been raked immediately prior to application.

B. Immediately after seeding, cover with 1/2” fine-textured sandy-loam layer and lightly rake smooth to obtain uniform coverage of seeds.

C. Plant only between October and mid-May.

HYDRO-SEEDING:

A. Mix Seed, Fertilizer, Tackifier and Fiber Mulch in water using equipment designed specifically for hydro-seed application. Mix until blended to a uniform homogenous slurry suitable for application and continue mixing during application. Apply slurry at a uniform rate to all areas to be seeded in a single process; apply as required to achieve a min. uniform sowing rate of 125 pounds per acre.

B. After one year inspect lawns for bare areas and infill with sandy soil and re-seed to remove any areas void of growth.

C. Seed Mixture for hydro-seeding and infill patching shall be as above.

D. Spray no hydro-seed materials into river or within 12” elevation of active water line.

END OF SECTION

APPENDIX A

FWP SPA PERMIT

Stream Protection Act (SPA 124) Permit

Date: 2/7/2019

Applicant Name: Montana Fish Wildlife and Parks

Address: P.O. Box 200701, 1522 Ninth Avenue, Helena, MT 59620-0701.

Permit #: MI-04-19 Billings R5

Waterbody: Yellowstone River

Project Name: Rosebud East Fishing Access Site Public Fishing Platform

Project Description:

Construction of a 10'x20' elevated fishing platform for public access and recreation. The platform will be supported by four 30-inch diameter concrete piers, with adjoining 20' long headwall and sidewalk which will allow public access from the existing concrete pad picnic area and parking area. Some addition of riprap or adjustment of existing riprap is expected particularly when setting the piers and headwalls. It is planned these activities will occur in the dry.

Montana Fish, Wildlife & Parks has reviewed the proposed project. The project is approved provided it is carried out in accordance with the information supplied in the application, all general conditions listed on page 3 of this permit, and any special conditions listed below.

Expiration: This permit is valid for 4 year(s) from the date of issuance.

Timing Restrictions: ☐No ☒Yes If yes see below.

In-stream work should occur during low flow periods typically between August 15th and September 15th. To allow for natural variability if conditions allow in-stream work can occur between July 31st and November 15th. To work in the dry, based on field measurements at the site in 2016, flows should be below 5,000 cfs. **Conversation with the Region 7 Fisheries Manager leads me to doubt the project will be completed entirely in the dry since water flows have been less than 5,000 cfs only three times in the last decade, a 318 will be preemptively provided.**

Special Conditions: Please notify Region 5 fisheries when the project is completed no special conditions. Follow Standards page 3.

318 Authorization Review

I have reviewed the above project on behalf of the Montana Department of Environmental Quality (DEQ) pursuant to the Montana Water Quality Act Short-term Water Quality Standards for Turbidity 75-5-318 MCA:

☐ This project **will not** increase turbidity if completed according to the conditions listed in the 310 or 124 permit. Therefore, application to DEQ for a 318 authorization **is not** required.

☐ Impacts to the physical and biological environment from turbidity generated as a result of this project are uncertain. Therefore, the applicant must contact the Montana Department of Environmental Quality, 1520 East Sixth Avenue, Box 200901, Helena, MT 59620-0901, (406 444-3080) to determine project specific narrative conditions required to meet short-term water quality standards and protect aquatic biota.

☒ Turbidity generated from this project is expected to be short-term and have only temporary and minor impacts on the physical and biological environment. Therefore, compliance with the conditions stated in the attached letter outlining ***DEQ's Short Term Water Quality Standard for Turbidity Related to Construction Activity,*** as well as other conditions listed in the 124 permit, are appropriate for this project.

Issuing Biologist: Mike Ruggles

Signature: Mike Ruggles

Stream Protection Act 124 Permit General Conditions

1. Complete work affecting a streambed or stream bank in an expeditious manner to avoid unnecessary impacts to the stream.

2. Limit the clearing of vegetation to that which is absolutely necessary for construction of the project. Take precautions to preserve existing riparian vegetation. Salvage and reuse native vegetation where possible.

3. Install and maintain erosion control measures where appropriate to protect aquatic resources. Do not clear and grub land adjacent to streams prior to installing proper erosion and sedimentation controls. Conduct all work in a manner that minimizes turbidity and other disturbances to aquatic resources.

4. Plan temporary construction facilities to:

    a. Minimize disturbance to stream banks, stream bank vegetation, and the streambed by locating staging or storage facilities at least 50' horizontally from the highest anticipated water level during construction;

    b. not restrict or impede fish passage in streams; and

    c. not restrict any flow anticipated during use.

5. Provide sediment controls for drainage from topsoil stockpiles, staging areas, access roads, channel changes, and instream excavations.

6. Isolate work zones from flowing and standing waters to prevent turbid water and sediments from being discharged into streams or other drainages that flow directly into the stream. Divert flowing waters around the work zone.

7. Do not spill or dump material into streams. Store and handle petroleum products, chemicals, cement and other deleterious materials in a manner that will prevent their entering streams.

8. Do not permit wash water from cleaning concrete-related equipment or wet concrete to enter streams.

9. Do not operate mechanized equipment in any stream or flowing water unless special authorization is obtained. If special authorization is granted, the following conditions apply:

    a. Power-wash all equipment allowed in a stream prior to entering the stream channel.

    b. Clean and maintain all equipment so that petroleum-based products and hydraulic fluids do not leak or spill into the waterway.

10. Reclaim streambeds and stream banks as closely as possible to their pre-disturbed condition.

11. Restore disturbed stream banks to their natural or pre-disturbed configuration to match adjacent ground contours or as specified in the project plans. Stabilize, reseed, and re-vegetate disturbed areas. Install and maintain long-term biodegradable erosion-control measures to protect these areas until adequate vegetation has been established.

12. Restore temporary access routes and any temporarily disturbed areas to original conditions, including original contours and vegetation.

13. Dispose of any excess material generated from the project above the ordinary high-water mark and in an area not classified as a wetland.

Montana Department of
ENVIRONMENTAL QUALITY

SHORT-TERM WATER QUALITY STANDARD FOR TURBIDITY RELATED TO CONSTRUCTION ACTIVITY
(318 Authorization)

Dear Applicant:

This 318 authorization is the result of your recent application for a 310 permit from your local Conservation District or a 124 permit from Montana Fish, Wildlife and Parks. This authorization is valid for the time frame noted on your permit.

This is not your 310 or 124 permit and no construction activity should occur until you have received a valid 310 or 124 permit as well as any other permits that apply to this proposed construction activity.

This authorization is the result of an Operating Agreement between the Montana Department of Environmental Quality (DEQ), and Montana Fish, Wildlife and Parks (FWP).

The applicant agrees to the comply with the conditions stated below, as well as other conditions listed in the 310 or 124 permit issued for this project. Signatures of the applicant and FWP are required to validate this authorization.

1. Construction activity in or near the watercourse are to be limited to the minimum area necessary, and conducted so as to minimize increases in suspended solids and turbidity that could degrade water quality and adversely affect aquatic life outside the immediate area of operation.

2. The use of machinery in the watercourse shall be avoided unless absolutely necessary.

3. All disturbed stream banks and adjacent areas created by the construction activity shall be protected with erosion control measures during construction. These areas shall be reclaimed with appropriate erosion control measures and revegetated to provide long-term erosion control.

4. Any excess material generated from this project must be disposed of above the ordinary high water mark, in an area not classified as a wetland, and in a position not to cause pollution of State waters.

5. Clearing of vegetation will be limited to that which is absolutely necessary for construction of the project.

6. This authorization does not authorize a point source surface water discharge. MPDES permit is required for said discharge.

7. Open cut creek crossings will not be allowed in flowing water. Stream water must be diverted around the open cut area (pump, flume etc.)

8. The applicant must conduct all activities in full and complete compliance with all terms and conditions of all permits required for this activity issued pursuant to the Montana Natural Streambed and Land Preservation Act (310 permit), the Stream Protection Act (124 permit) the Federal Clean Water Act (404 Permit), any MPDES permits for dewatering or storm water control in the construction area and any valid Memorandum of Agreement and Authorization (MAA) negotiated for this activity.

The FWP representative has determined that this project is within the scope of the programmatic Environmental Assessment prepared by DEQ and FWP for the issuance of narrative turbidity standards.

_____ Date: 2/7/2019
FWP Representative's Signature

_____ Date: _____
Applicant's Signature

Name and location of project: Rosebud East Fishing Access Site Public Fishing Platform

This 318 is valid for 4 years from 2/7/2019

DEPARTMENT OF FISH, WILDLIFE AND PARKS
1420 E 6th Ave, PO Box 200701 Helena, MT 59620-0701
(406) 444-2535

ENVIRONMENTAL ASSESSMENT

Project Title __Rosebud East Fishing Access Site Public Fishing Platform

Division/Bureau Fish and Wildlife/Fisheries

Program Fisheries

Description of Project: Construction of a 10'x20' elevated fishing platform for public access and recreation. The platform will be supported by four 30-inch diameter concrete piers, with adjoining 20' long headwall and sidewalk which will allow public access from the existing concrete pad picnic area and parking area. Some addition of riprap or adjustment of existing riprap is expected particularly when setting the piers and headwalls. It is planned these activities will occur in the dry.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			x			
2. Water quality, quantity & distribution				x		
3. Geology & soil quality, stability & moisture				x		
4. Vegetation cover, quantity & quality			x			
5. Aesthetics			x			
6. Air quality				x		
7. Unique, endangered, fragile, or limited environmental resources				x		
8. Demands on environmental resources of land, water, air & energy				x		
	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED

						PAGES
9. Historical & archaeological sites					x	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				x		
2. Cultural uniqueness & diversity				x		
3. Local & state tax base & tax revenue				x		
4. Agricultural or industrial production				x		
5. Human health			x			
6. Quantity & distribution of community & personal income				x		
7. Access to & quality of recreational and wilderness activities		x				
8. Quantity & distribution of employment			x			
9. Distribution & density of population & housing				x		
10. Demands for government services			x			
11. Industrial & commercial activity				x		
12. Demands for energy				x		
	MAJOR	**MODERATE**	**MINOR**	**NONE**	**UNKNOWN**	**COMMENTS ON ATTACHED**

						PAGES
13. Locally adopted environmental plans & goals		x				
14. Transportation networks & traffic flows				x		

Other groups or agencies contacted or which may have overlapping jurisdiction None

Individuals or groups contributing to this EA Mike Backes Region 7 Fisheries.

Recommendation concerning preparation of EIS NA
EA prepared by : Mike Ruggles

Date: 2/7/2019

COMMENTS

Physical Environment 1-limited disturbance. 4-already riprap bank limited disturbance with new structure. 5-for some this will improve aesthetics for access others may feel increased development is unwanted. Minor overall. 9-this site has already been modified with riprap and FAS development and unknowns for this site would be limited. Human Environment-5 These improvements allow people with physical and mental challenges to better access nature which can improve health and well-being. 7-This will improve access particularly for people with physical challenges. 8-this project will support a contractor and crew for implementation. 10-During high water events the railings will need to be pulled out or they will be damaged. Some regular clean up will be necessary. 13-this fits well within the FWP state fisheries plan for access opportunities and the vison documents.